PROJECTILE CATCHING AND THROWING TOY

Field of the Invention

The invention relates to toys used with a projectile such as a ball, and more particularly, to hand held throwing and catching devices used to facilitate throwing and catching such a projectile.

Background

Perhaps one of the most popular types of games played through the years involves catching and throwing a ball. Although various types of balls can be caught and thrown with bare hands, in many cases it is desirable to use a hand held device or toy to facilitate catching and/or throwing the ball. In some cases, such as a standard baseball glove, the device is used only for catching the ball, whereas in other cases, such as a lacrosse stick, the device may be used for both catching and throwing. A variety of catching/throwing devices having different shapes and configurations have been provided through the years.

For example, U.S. Patent No. 3,392,978 to Wiest discloses a ball projecting and catching device having an arcuate platform for catching a moving ball and subsequently launching the ball into flight in a cyclical motion. U.S. Patent No. 2,710,753 to Lockwood discloses a racquet game device enabling a player to catch, hold, and propel a ball, including a V-shaped frame for frictionally engaging the ball. Other examples of catching/throwing devices can be found in U.S. Patent Nos. 2,025,995, 1,458,335, 651,222, and in publication GB 2,112,290.

While the foregoing prior art devices have provided some enjoyment and amusement for users, there remains a continuing need in the art for evermore interesting and exciting ball catching/throwing toys and the like.

Brief Description of the Drawings

Fig. 1 is a perspective view of the throwing/catching toy showing a ball entering the basket portion of the toy;

Fig. 2 is a plan view of the toy, showing a ball fully received within the basket portion of the toy;

Fig. 3 is a side view of the toy shown in Fig. 2;

Fig. 4 is a view taken along lines 4-4 of Fig. 3;

Fig. 5 is a plan view of the toy of the present invention which does not include a handle; and

Fig. 6 is a side view of the toy shown in Fig. 5.

Detailed Description of the Preferred Embodiment

The present invention is directed to a novel toy used for throwing and catching a projectile, such as a ball. The toy enables a player to throw the ball with the same toy used to catch the ball. Fig. 1 shows a throwing/catching toy, generally indicated at 10, in accordance with an embodiment of the present invention. Toy 10 includes a handle 12, and a basket portion 14 attached to the handle. The basket portion includes a plurality of retaining members 16, a projectile support structure generally indicated at 18, and a primary aperture 20 disposed at the end of the basket portion opposite from the handle.

A ball 22 is shown entering basket portion 14, while being caught with toy 10. The ball is depicted as semi-transparent, so that components of support structure 18 are visible behind the ball. One suitable ball is an ordinary tennis ball, but in general, toy 10 may be used to catch and throw projectiles of various sizes and shapes. To use the toy to catch the ball, a player may grip handle 12, and holding toy 10 in a suitable position, may orient basket portion 14 so that the moving ball collides with one or more of retaining members 16. The retaining members are spaced apart by a distance that is generally less than the diameter of the ball, but are somewhat flexible. Therefore, as depicted in Fig. 1, the retaining members yield sufficiently to allow the moving ball to pass between them and into the interior of the basket portion of the toy.

Retaining members 16, while flexible, are provided with sufficient tension to snap back into place after the ball has passed into the interior of the basket portion, preventing or at least significantly inhibiting the ball from rebounding through the retaining members and out of the basket portion. For example, the retaining members may be constructed from elastic shock cord material (i.e., bungee cord), as will be described in more detail below.

Once ball 22 has passed through retaining members 16 and into the interior of basket portion 14, it contacts support structure 18. In the depicted embodiment, the support structure includes several elongate support members 24 arranged in a criss-cross pattern, defining apertures that are too small for the ball to pass through. However, other support structures are possible, such as a substantially

solid backing member, which may be flexible to some degree, or a combination of crossed support members and backing members. Providing a support structure with some amount of flexibility may allow the ball to be received within basket portion 14 without rebounding excessively, since the support structure will tend to absorb some of the kinetic energy of the ball.

Fig. 2 shows a plan view of toy 10, with ball 22 disposed within basket portion 14 of the toy after being caught. As indicated, the ball may rest against one or more support members 24 of the basket portion, until such time as the player wishes to throw the ball. In general, the support structure of the toy is configured to prevent passage of the ball (or other projectile) and, in conjunction with the retaining members, to cause the ball to stop within the interior of the basket portion. Thus, since the ball is inhibited from passing through either the support structure or rebounding back through the retaining members, it is retained within the basket portion of toy 10 after being caught. Once the ball has been caught, a player may run with the toy, for example while attempting to evade other players, or in some preselected or spontaneous play activity. During such activities, the ball will be maintained in a substantially secure position within the basket portion of the toy until the player exerts a throwing action, as described below.

Fig. 3 shows a right elevational view of toy 10, illustrating possible details of the toy's construction. In the depicted embodiment, a lower component 26 of the toy includes a lower portion 28 of handle 12, and also defines support structure

18, including a plurality of crossed support members 24. A first upper component 30 is attached to the end of the lower component proximal to the handle, to form an upper portion 32 of the handle and to define a proximal boundary of basket portion 14. A second upper component 34 is attached to the end of the lower component distal to the handle, defining primary aperture 20 in conjunction with the distal end of the support structure, and defining a distal boundary of the basket portion.

Still referring to Fig. 3, ball 22 is shown at rest within basket portion 14 of the toy, and also as it might exit the toy through aperture 20 while being thrown. To throw ball 22 or any other projectile using toy 10, the player, while gripping handle 12 may use an appropriate throwing motion to launch the ball outwardly through primary aperture 20, which is disposed at the end of basket portion 14 opposite from the handle. The ball then may roll or otherwise travel along the interior of the basket portion, while gaining speed before launching from the toy through aperture 20. The launch velocity will generally have a direction tangent to the curvature of support structure 18.

As shown in Fig. 4, which is a cross sectional view of the primary aperture taken along line 4-4 of Fig. 3, aperture 20 is configured to allow passage of the ball, and is generally approximately oval or elliptical, with a minor axis A_1 slightly larger than a diameter D_1 of the ball or other projectile being thrown. Thus, the ball may be launched through the aperture with minimal friction, and in a controlled manner.

As described previously, retaining members 16 may be constructed from sections of elastic shock cord. In the depicted embodiment, members 16 are constructed from a single length of shock cord, which is threaded through apertures 36 in upper components 30 and 34, and tied off at both ends. Thus, the tension in the retaining members is substantially constant, and may be adjusted to be sufficient to allow passage of a moving projectile, but to retain the projectile within the basket portion of the toy once it has been caught.

The handle and support structure of the toy may be constructed from any suitable material, preferably a lightweight and substantially rigid plastic or thermoplastic material. Alternatively, the toy may be constructed from wood, aluminum, and/or other metals or composite materials, among others. In one embodiment, toy 10 may be approximately 10-20 inches (10"-20") in total length, and preferably approximately 15" in length. The toy's width at its widest point may be approximately 4"-7", and is preferably approximately 5.5". Handle 12 may be approximately 4"-8" long and 1"-2" wide, and is preferably approximately 6" long and approximately 1.3" wide. Basket portion 14 may be approximately 6"-12" long and approximately 4"-8" deep, and is preferably approximately 9" long and approximately 5.75" deep. Retaining members 16 may be constructed from a single piece of elastic shock cord, interwoven through apertures 36 to form substantially parallel, flexible members aligned with the longitudinal axis of handle 12. The shock cord used in such an embodiment has a diameter smaller than the diameter of apertures 36, and a length suitable for being stretched to

several times the length of the basket portion. Preferably, the shock cord is approximately 36" long and approximately 1/8" in diameter.

Another embodiment of the throwing/catching toy of the present invention is shown in Figs. 5 and 6, and in particular, this embodiment does not include a handle, such as handle 12 shown in Figs. 1-3. As shown in Fig. 5, an embodiment of the toy generally indicated at 40, does not include a handle, but is constructed with the same essential construction as toy 10, with the following additional provisions. A foam or elastomeric pad, generally indicated at 42 is provided with the shape generally as shown, a wider portion being indicated at 44 and a narrower portion at 46. The foam or elastomeric pad may be made of suitable material, examples of which include neoprene or silica foam, and the pad is dimensioned so that it fits against the bottom of several of the support members 24 as shown. A strap, indicated at 48 is suitably wrapped around extensions 25 which extend between adjacent support members 24 at opposite ends thereof. A suitable buckle or other fastening mechanism is indicated at 50.

The idea is that with this embodiment, a person can play catch with the ball at closer distances, and a different type of game play is provided. The pad is provided for shock absorbing purposes, when the ball enters through the retaining members 16 and strikes against support members 24. As shown in Fig. 5, it is contemplated that the fingers will extend to the right, with the palm downward against pad 42 and strap 52 secured around the back of the hand. Game play is provided, as explained above, where the participants are closer to one another and

the toy, as shown in Figs. 5 and 6, may be thought of as being used somewhat like a glove or mitt, with players seeking to catch the ball more in what would correspond to the palm of the hand and then fling or throw it out from the opening such as primary aperture 20 as shown.

From the above description, it can be seen that projectile thrower/catcher toy 10 provides enhanced play value and vigorous throwing and catching activities involving a projectile such as a tennis ball, or more relaxed casual play. By providing a lightweight, easily maneuverable device, the toy enables a player to present an opening, such as the basket portion described, to catch a flying projectile even while the player is on the run, or stretched into a difficult position to try and reach a rapidly approaching ball over the player's head, down near the feet, off to the side, etc.

While the present description has been provided with reference to the foregoing embodiments, those skilled in the art will understand that many variations may be made therein without departing from the spirit and scope defined in the following claims. The description should be understood to include all novel and non-obvious combinations of elements described herein, and claims may be presented in this or a later application to any novel and non-obvious combination of these elements. The foregoing embodiments are illustrative, and no single feature or element is essential to all possible combinations that may be claimed in this or a later application. Where the claims recite "a" or "a first" element or the equivalent thereof, such claims should be understood to include

incorporation of one or more such elements, neither requiring, nor excluding, two or more such elements.